Increasing Quadro FXO Capability with Mediatrix

Abstract: **This document explains how to connect the Mediatrix 1204 to Quadro4x/16x and configure both devices so that the Mediatrix FXO ports can be used as additional Quadro FXO ports.**

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Table of Contents:

1 Introduction 3
2 Prerequisites 3
3 Configuration 3
3.1 Quadro Setup 3
3.1.1 DHCP Server Configuration 3
3.1.2 Call Routing Configuration 4
3.2 Mediatrix 1204 Setup 8
3.2.1 Configuring the Mediarix as a DHCP Client 8
3.2.2 Local Port Configuration 10
3.2.3 Setting the Mediatrix Proxy Server 11
3.2.4 Redirecting Incoming Calls to Quadro 12
4 Restrictions with additional FXO lines 13

1 Introduction

The Mediatrix 1204 is an analogue gateway that allows connectivity between the PSTN and a VoIP network. The device can be used with the Quadro4x/16x to emulate additional FXO ports.

This document describes how to configure the Quadro with the Mediatrix 1204 to increase Quadro FXO capability.

For the detailed information on how to install and use the Mediatrix refer to the **Mediatrix 1204 Administration Manual**.

For the detailed information on how to install and use the Quadro refer to **Manual II: Administrator's Guide for Quadro4x, Quadro4xi, Quadro16x and Quadro16xi**.

2 Prerequisites

- The Quadro is connected to the network and all network settings are done without any issues.
- The Mediatrix 1204 is connected to the LAN socket of the Quadro via a straight-through Cat 5 cable with a RJ 45 connector.
- FXO lines of the Quadro and Mediatrix are connected to telephone lines.
- SOHO-SW 3.0.5 or later image running on the Quadro.
- 4.4.13.88 or later software image or later image running on the Mediatrix 1204.

3 Configuration

This section presents step-by-step instructions on both the Quadro and Mediatrix setups.

3.1 Quadro Setup

3.1.1 DHCP Server Configuration

The Mediatrix 1204 has to have an IP address to identify itself in the Quadro LAN. This IP address can be assigned to it manually or dynamically via the Quadro's DHCP server. A simpler way from the configuration perspective is to dynamically get an IP address from the Quadro. This requires configuration of the Quadro as a DHCP server and the Mediatrix as a DHCP client. So the first step is to configure the Quadro as a DHCP server for its LAN interface:

1. Login to the Quadro as an administrator and select **DHCP Settings for the LAN Interface** from the **LAN services** menu.
2. Make sure the **Enable DHCP Server** checkbox is selected and the **IP Address Range** is configured (see Figure 1: Enabling the DHCP server on the Quadro).

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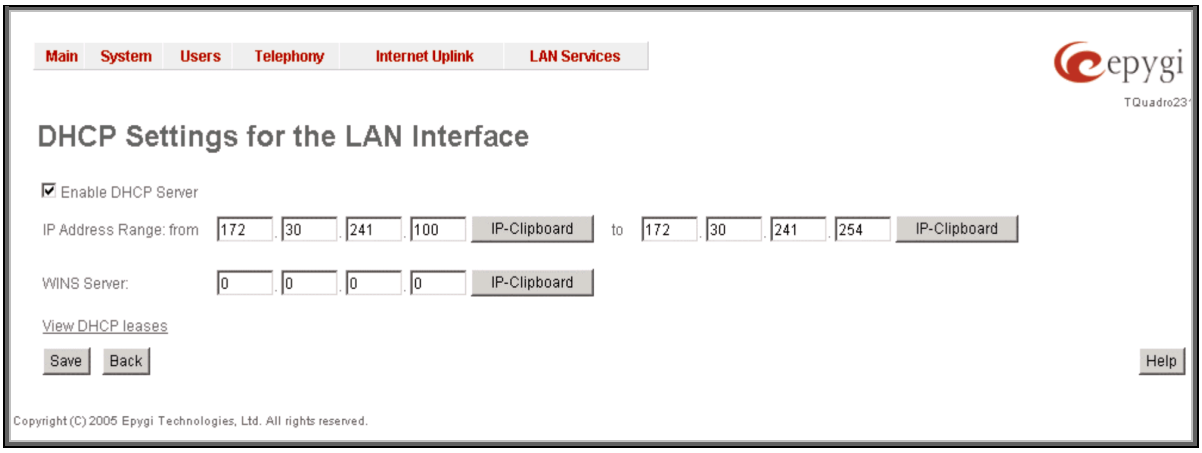
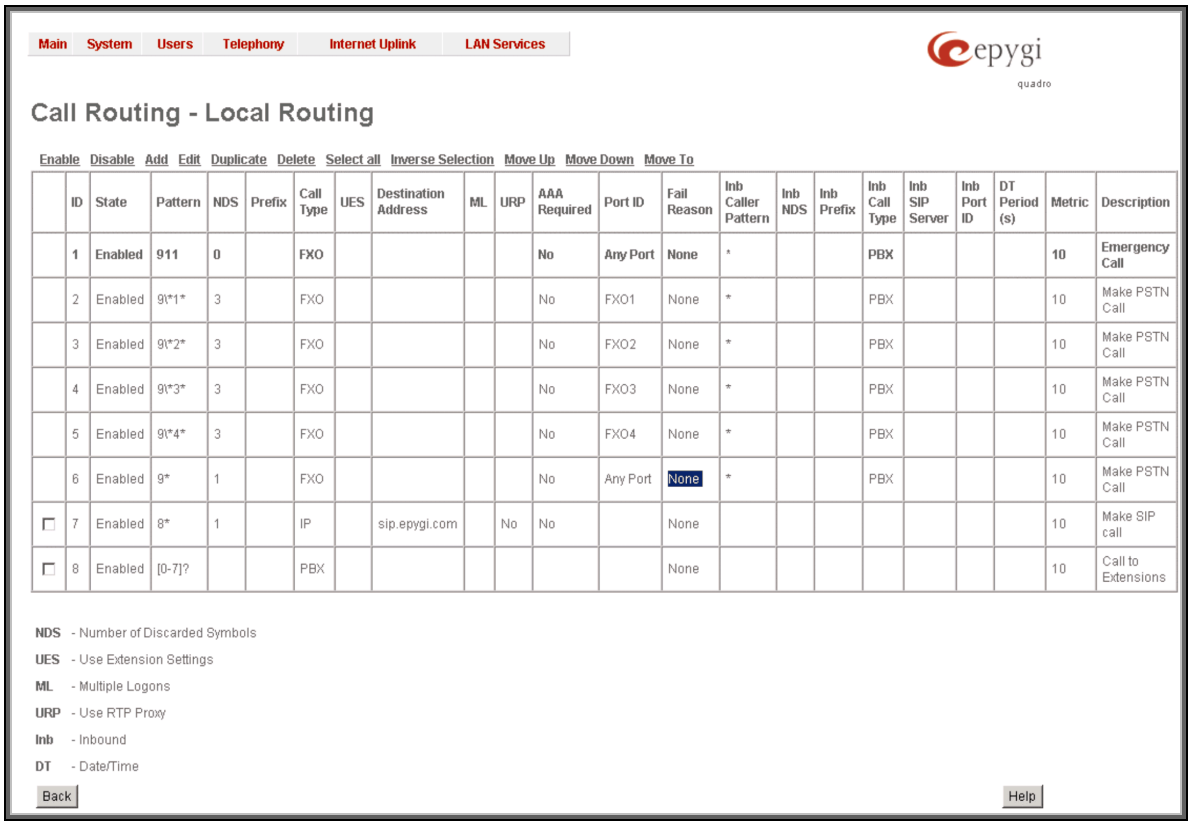


Figure 1: Enabling the DHCP server on the Quadro

3.1.2 Call Routing Configuration

To be able to make outgoing PSTN calls from the phones connected to the Quadro using Mediatrix FXO ports, you need to define a new routing rule in the **Local Routing Table**.

1. From the **Telephony** menu select the **Call Routing** item and click on the **Local Routing Table.** The **Call Routing - Local Routing** page is displayed (Figure 2 The local routing table).



	ID	State	Pattern	NDS	Prefix	Call Type	UES	Destination Address	ML	URP	AAA Required	Port ID	Fail Reason	Inb Caller Pattern	Inb NDS	Inb Prefix	Inb Call Type	Inb SIP Server	Inb Port ID	DT Period (s)	Metric	Description
	1	Enabled	911	0		FXO					No	Any Port	None	*			PBX				10	Emergency Call
	2	Enabled	9*1*	3		FXO					No	FXO1	None	*			PBX				10	Make PSTN Call
	3	Enabled	9*2*	3		FXO					No	FXO2	None	*			PBX				10	Make PSTN Call
	4	Enabled	9*3*	3		FXO					No	FXO3	None	*			PBX				10	Make PSTN Call
	5	Enabled	9*4*	3		FXO					No	FXO4	None	*			PBX				10	Make PSTN Call
	6	Enabled	9*	1		FXO					No	Any Port	None	*			PBX				10	Make PSTN Call
☐	7	Enabled	8*	1		IP		sip.epygi.com		No	No		None								10	Make SIP call
☐	8	Enabled	[0-7]?			PBX							None								10	Call to Extensions

Figure 2: The local routing table

2. Click the **Add** button to go through **Local Call Routing Wizard** and set the parameters for the rule to be created.
3. On the first page of the **Local Call Routing Wizard** fill in

   - the **Pattern** and **Number of Discarded Symbols** fields with the same values as you have for the Quadro PSTN access rule;
   - the **Prefix** field with the symbol "p". This value prompts the Mediatrix to provide dial tone when user dials 9#;

and

   - set the **CallType** parameter to "IP".

   You may omit the other fields blank or fill with the values you find necessary (for the descriptions of those parameters refer to **Manual II: Administrator's Guide for Quadro4x, Quadro4xi, Quadro16x and Quadro16xi**).

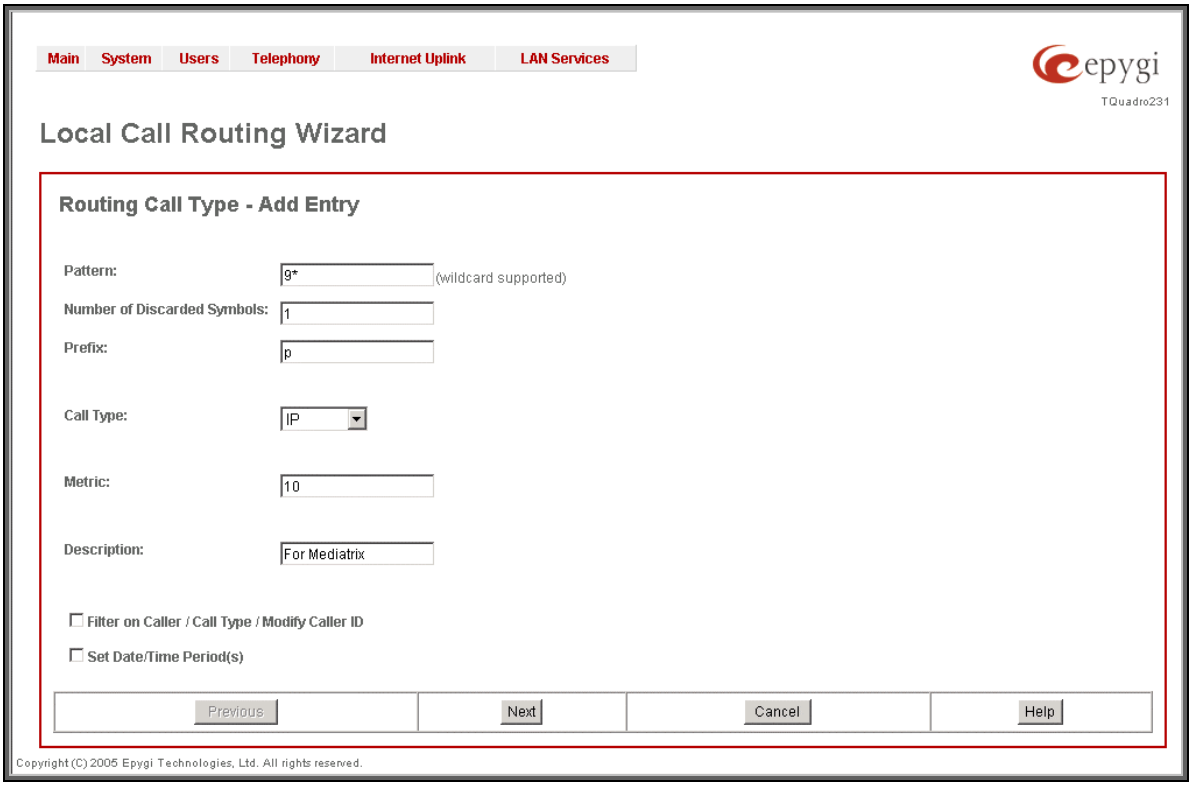


Figure 3: Local Call Routing Wizard - page 1

4. On the next page of the Local Call Routing Wizard fill in

   - the **Destination IP Address** and **Destination Port** with Mediatrix IP address and port number (172.30.241.100 in the considered example). You may leave the **Destination Port** field empty if the Mediatrix uses 5060 port number (this is the default port number used on the Quadro).
   - Set the **Fail Reason** to "Any" and click **Next**.

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You may omit the other fields blank or fill with the values you find necessary (for the descriptions of those parameters refer to **Manual II: Administrator's Guide for Quadro4x, Quadro4xi, Quadro16x and Quadro16xi**).

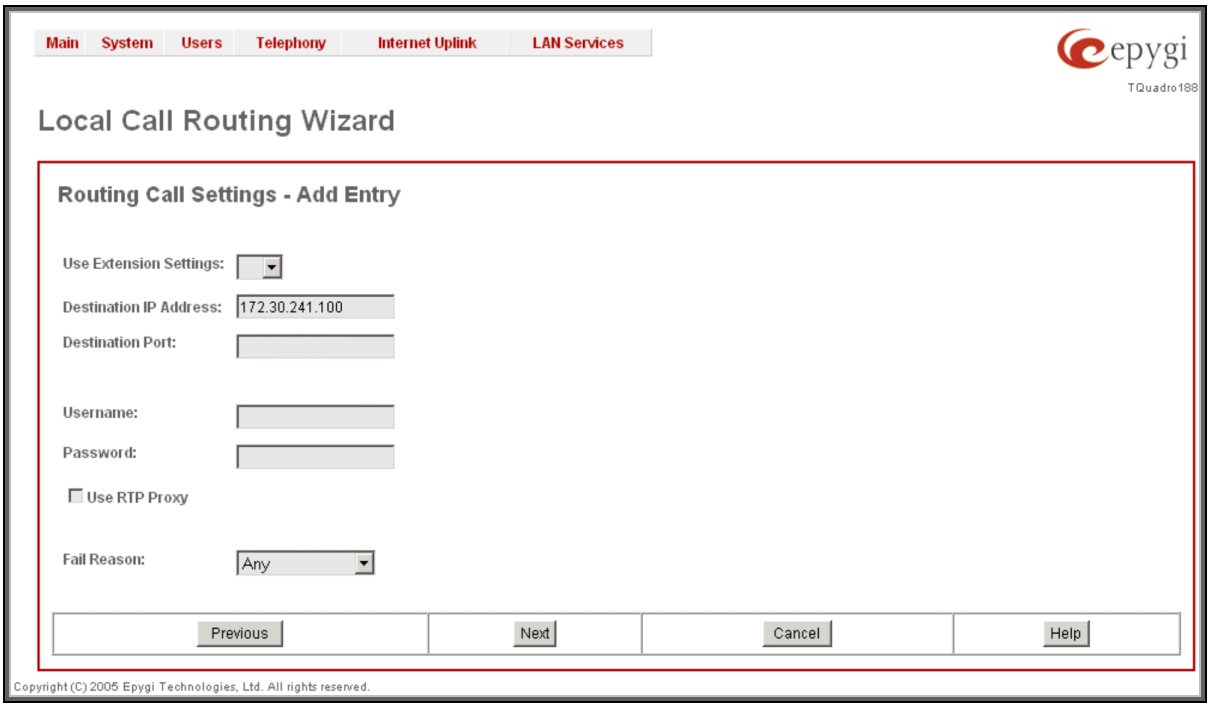

Figure 4: Local Call Routing Wizard - page 2

5. The last page of the wizard gives the summary of the rule to be created (Figure 5 Local Call Routing Wizard - page 3). Press **Finish** to create the rule with the specified properties. The newly created rule is added to the **Local Routing Table** (Figure record number 9).

Figure 5: Local Call Routing Wizard - page 3

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Main System Users Telephony Internet Uplink LAN Services

epygi quadro

Call Routing - Local Routing

Enable Disable Add Edit Duplicate Delete Select all Inverse Selection Move Up Move Down Move To

	ID	State	Pattern	NDS	Prefix	Call Type	UES	Destination Address	ML	URP	AAA Required	Port ID	Fail Reason	Inb Caller Pattern	Inb NDS	Inb Prefix	Inb Call Type	Inb SIP Server	Inb Port ID	DT Period (s)	Metric	Description
	1	**Enabled**	**911**	**0**		**FXO**					**No**	**Any Port**	**None**	*			**PBX**				**10**	**Emergency Call**
	2	Enabled	9*1*	3		FXO					No	FXO1	None	*			PBX				10	Make PSTN Call
	3	Enabled	9*2*	3		FXO					No	FXO2	None	*			PBX				10	Make PSTN Call
	4	Enabled	9*3*	3		FXO					No	FXO3	None	*			PBX				10	Make PSTN Call
	5	Enabled	9*4*	3		FXO					No	FXO4	None	*			PBX				10	Make PSTN Call
	6	Enabled	9*	1		FXO					No	Any Port	None	*			PBX				10	Make PSTN Call
☐	7	Enabled	8*	1		IP		sip.epygi.com		No	No		None								10	Make SIP call
☐	8	Enabled	[0-7]?			PBX							None								10	Call to Extensions
☐	9	Enabled	9*	1	p	IP		172.30.241.100		No	No		Any								10	

NDS - Number of Discarded Symbols
UES - Use Extension Settings
ML - Multiple Logons
URP - Use RTP Proxy
Inb - Inbound
DT - Date/Time

Back Help

Figure 6: The local routing table

How this record works: If the user dials **9** followed by a PSTN number (or 9+ # + PSTN number) and no free FXO line is available on the Quadro (they are either in use or disabled), the call will go through a Mediatrix FXO port.

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3.2 Mediatrix 1204 Setup

The configuration steps to be executed on the Mediatrix include:

1. Configuring the Mediatrix as a DHCP client
2. Local port configuration
3. Setting the Mediatrix Proxy Server
4. Redirecting Incoming Calls to Quadro

3.2.1 Configuring the Mediarix as a DHCP Client

1. On the main page of the Mediatrix GUI (Figure 7 The main page of the Mediatrix GUI) right click the **Administration** tab and select **Edit** (Figure 8). This opens the **Adminstration** dialog box enabling you to modify IP configuration settings.

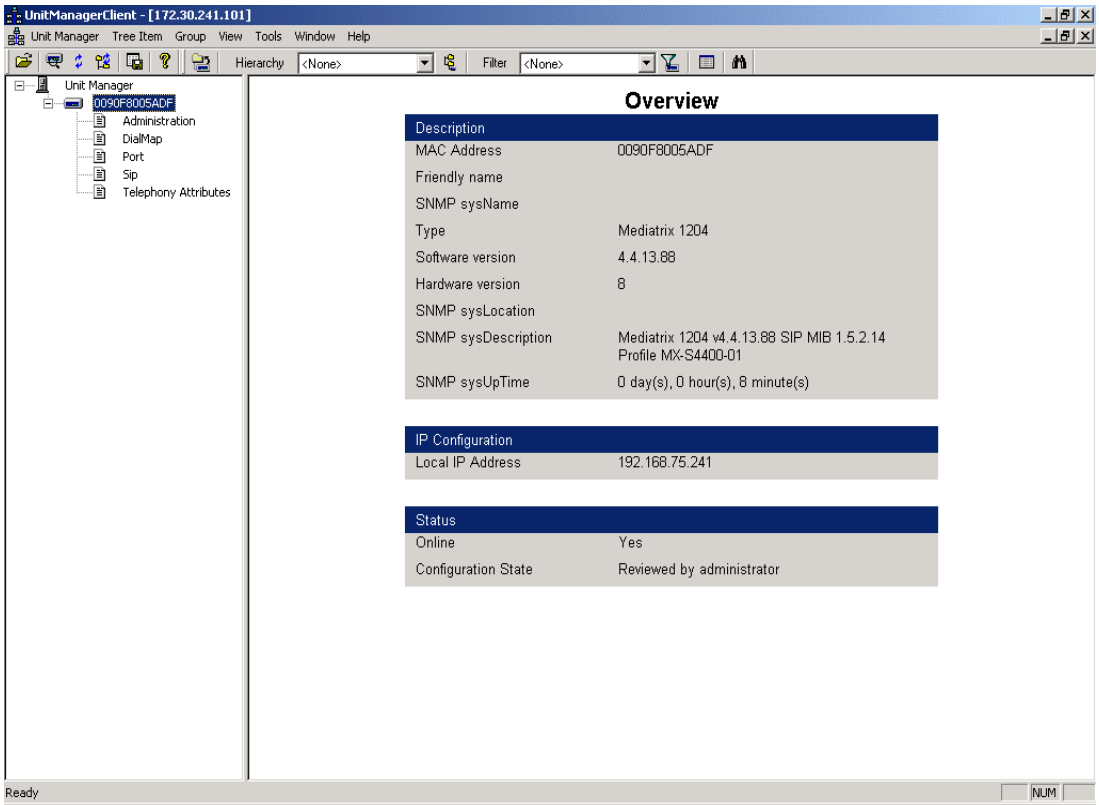

Figure 7 The main page of the Mediatrix GUI

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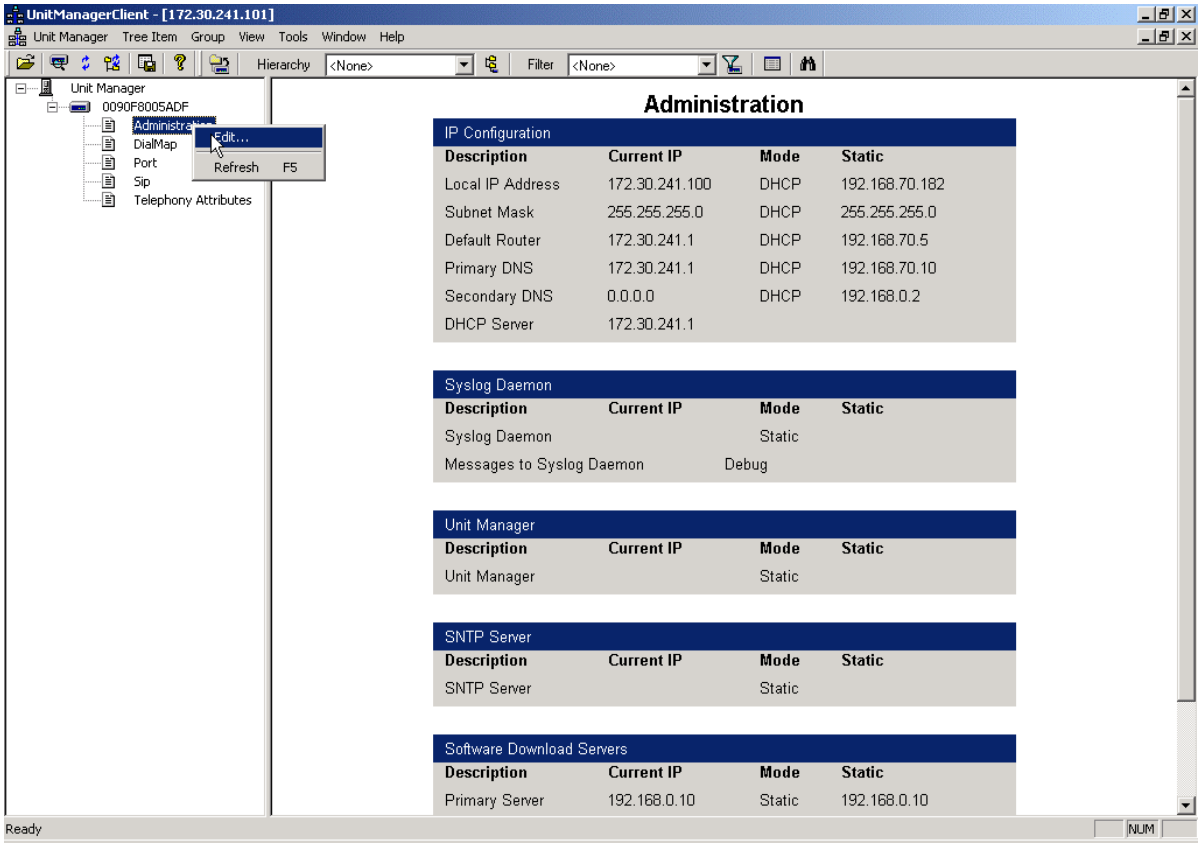

Figure 8

2. Enable the checkbox **Use DHCP** in the **IP Configuration** group and click **OK** (Figure 9 Enabling the DHCP client on the Mediatrix).

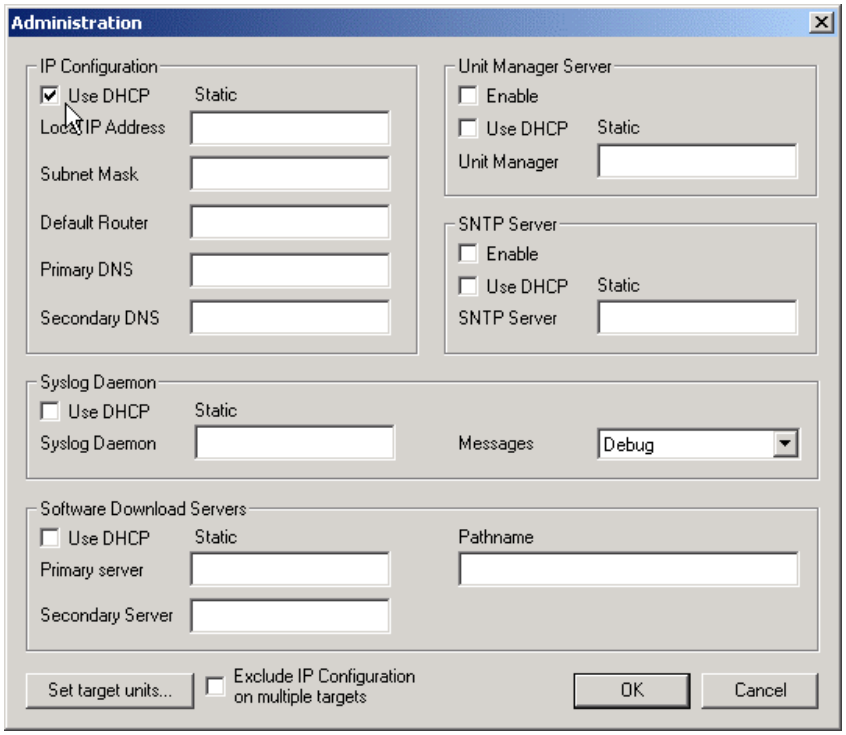

Figure 9 Enabling the DHCP client on the Mediatrix

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3.2.2 Local Port Configuration

1. On the main page of the Mediatrix GUI (Figure 7 The main page of the Mediatrix GUI) right click the **Port** tab and select **Edit** (Figure 10).

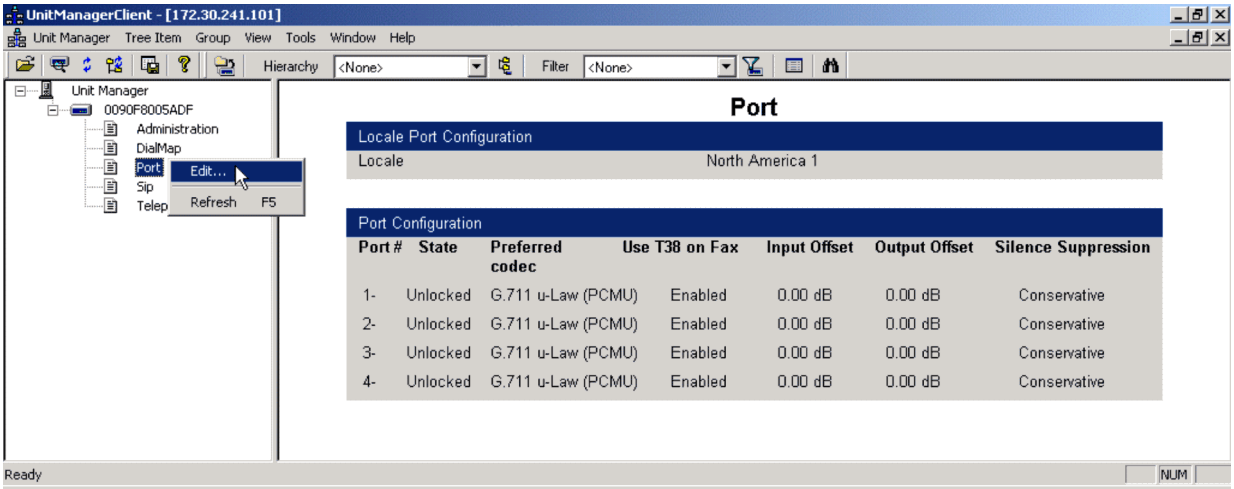

Figure 10

2. From the **Country** list box select the country in which the Mediatrix is used to allow the latter to set the country-specific parameters (tones, rings, etc.) according to your choice (Figure 11 Selecting the country).

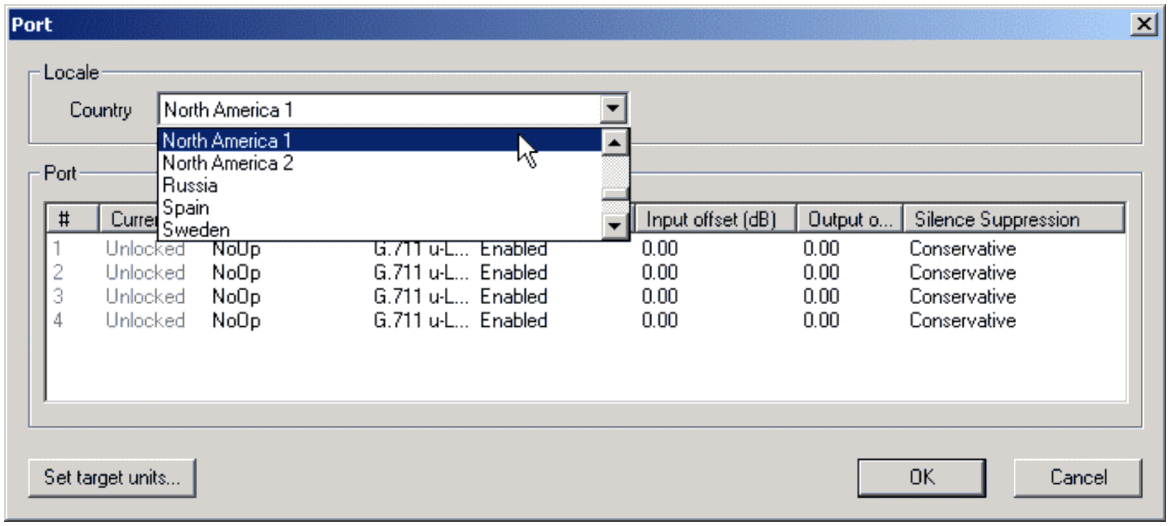

Figure 11 Selecting the country

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3.2.3 Setting the Mediatrix Proxy Server

1. On the main page of the Mediatrix GUI (Figure 7 The main page of the Mediatrix GUI) right click the **Sip** tab and select **Edit** (Figure 12).

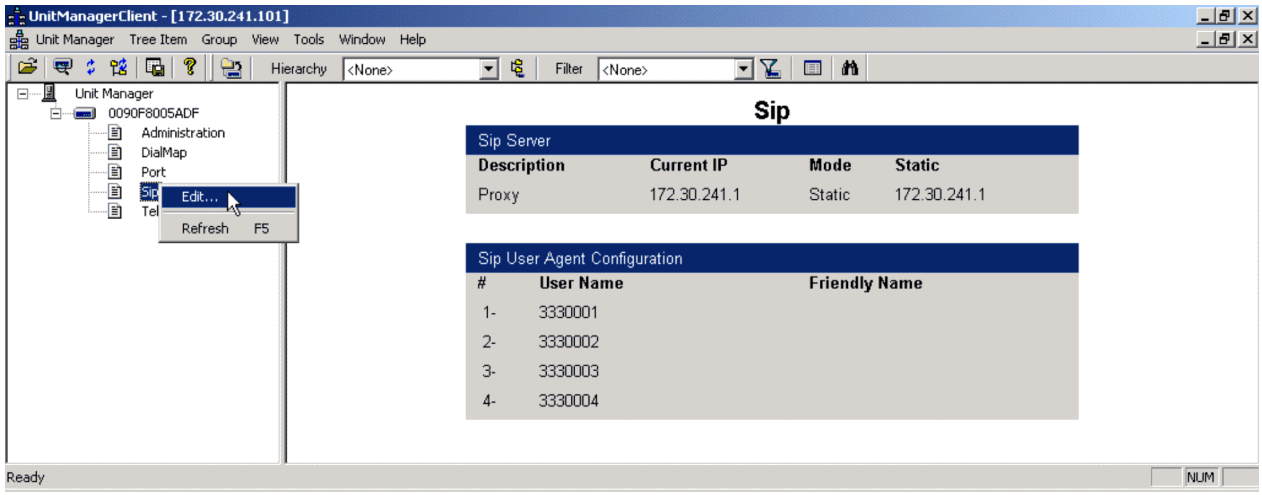

Figure 12

2. In the **SIP Proxy field** enter the Quadro LAN IP address (you can get the Quadro LAN IP address from the **System** menu **Status→Network Status** item). Make sure the checkbox **Use DHCP** is disabled (Figure 13).

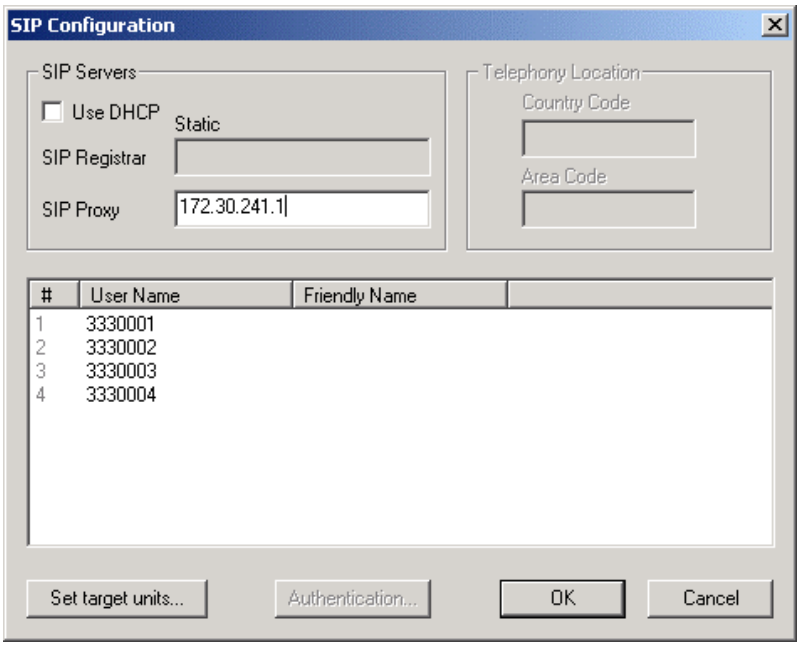

Figure 13

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3.2.4 Redirecting Incoming Calls to Quadro

1. On the main page of the Mediatrix GUI (Figure 7 The main page of the Mediatrix GUI) right click the **Telephony Attribute** tab and select **Edit** (Figure 14).

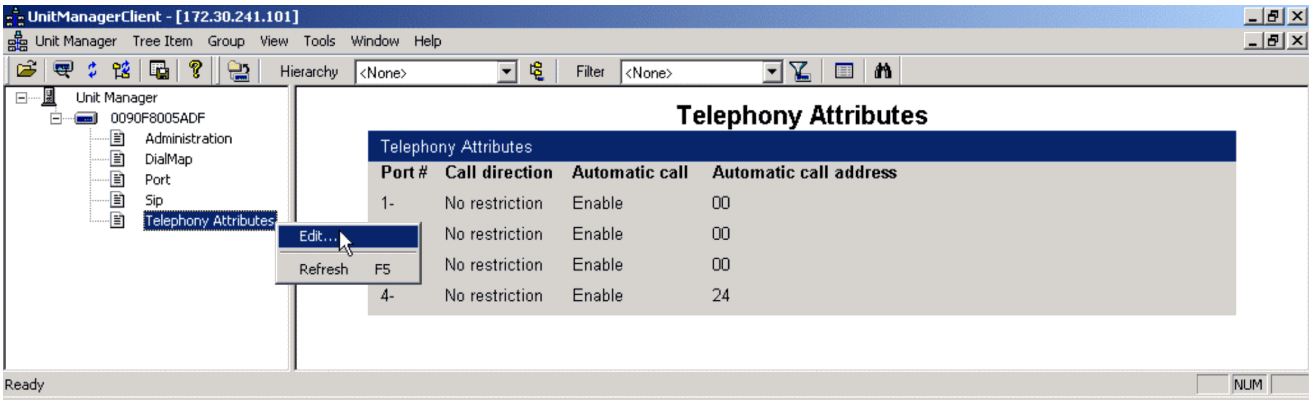

Figure 14

2. From the **Automatic call** column enable the FXO ports calls to which are to be redirected to the Quadro (Figure 15).
3. In the corresponding cell of the **Automatic call address** column enter the Quadro extension the call is to be redirected to. (In Figure 15 calls to FXO ports 1-3 are redirected o Quadro Auto Attendant, calls to port 4 to Quadro extension 24).

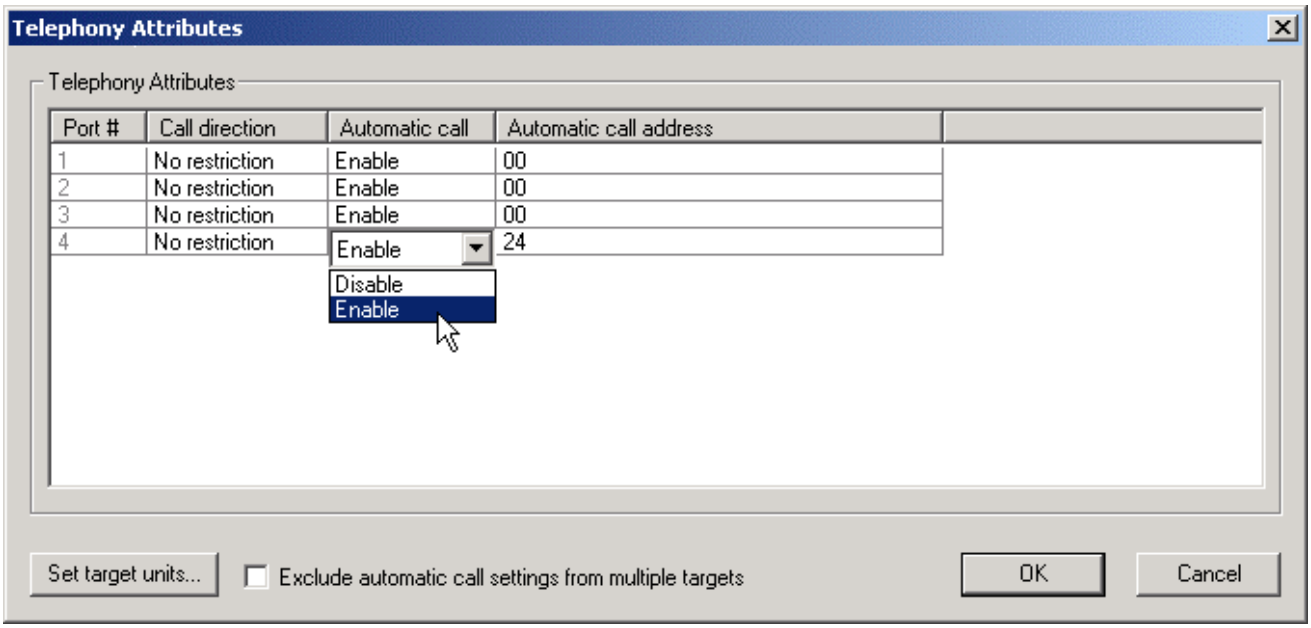

Figure 15

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4 Restrictions with additional FXO lines

- Calls to emulated FXO lines cannot be routed to **Routing table**.
- The hold music is not played to PSTN callers.
- PSTN callers cannot be called back with the feature code ***2**.
- All FXO calls have SIP call type in the **Call Statistics** pages.
- When specifying the settings of Caller ID-based supplementary services (speed calling, many extension ringing, hot line, call forwarding etc.), the call type have to be set to **SIP** instead of **PSTN**.
- There is no way to select an FXO line for outgoing calls. All calls go through pool mode.

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